



Independent Environmental Monitoring Agency

Monitoring BHP-Billiton's Diamond Mine

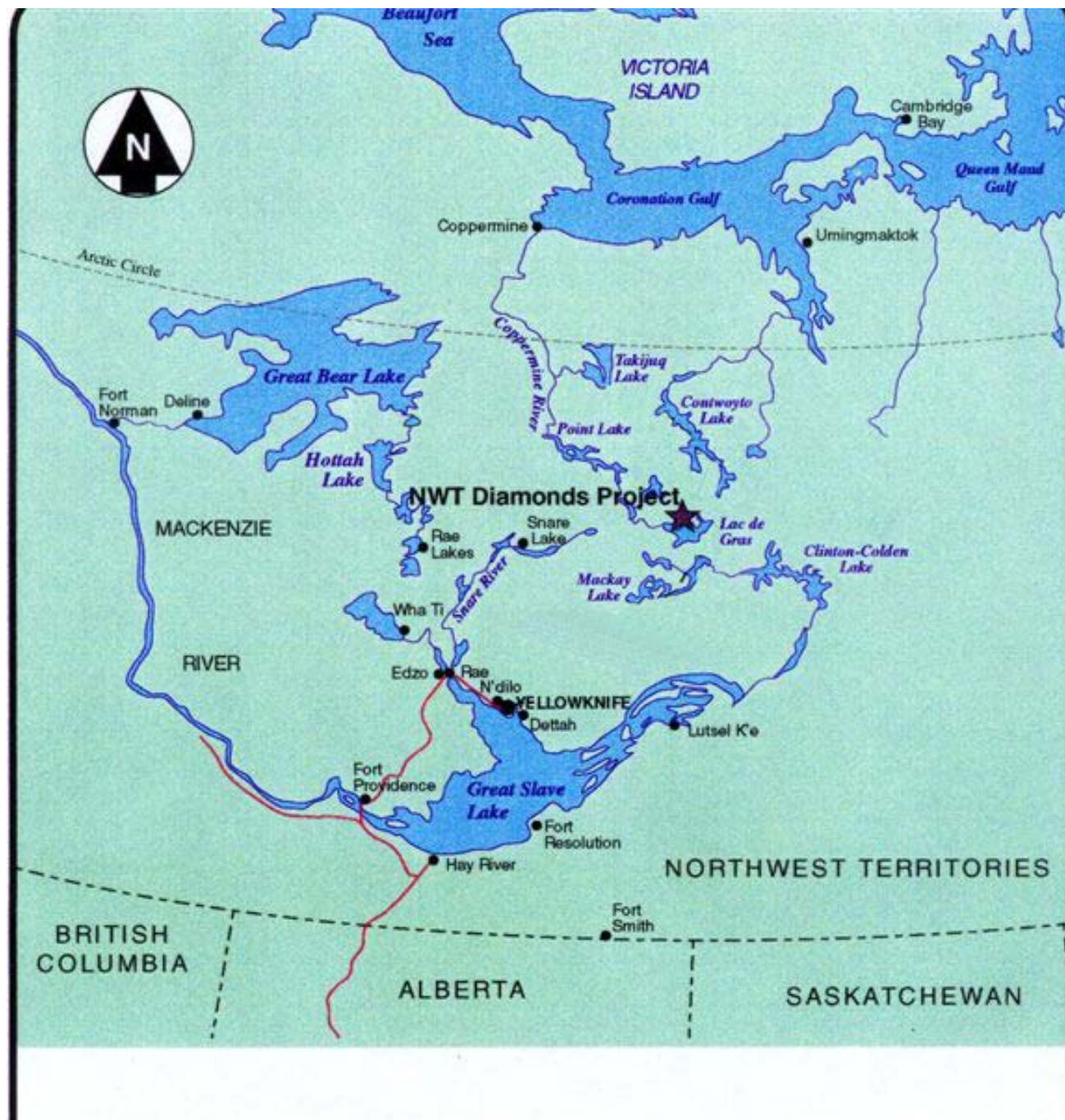
Tim Byers

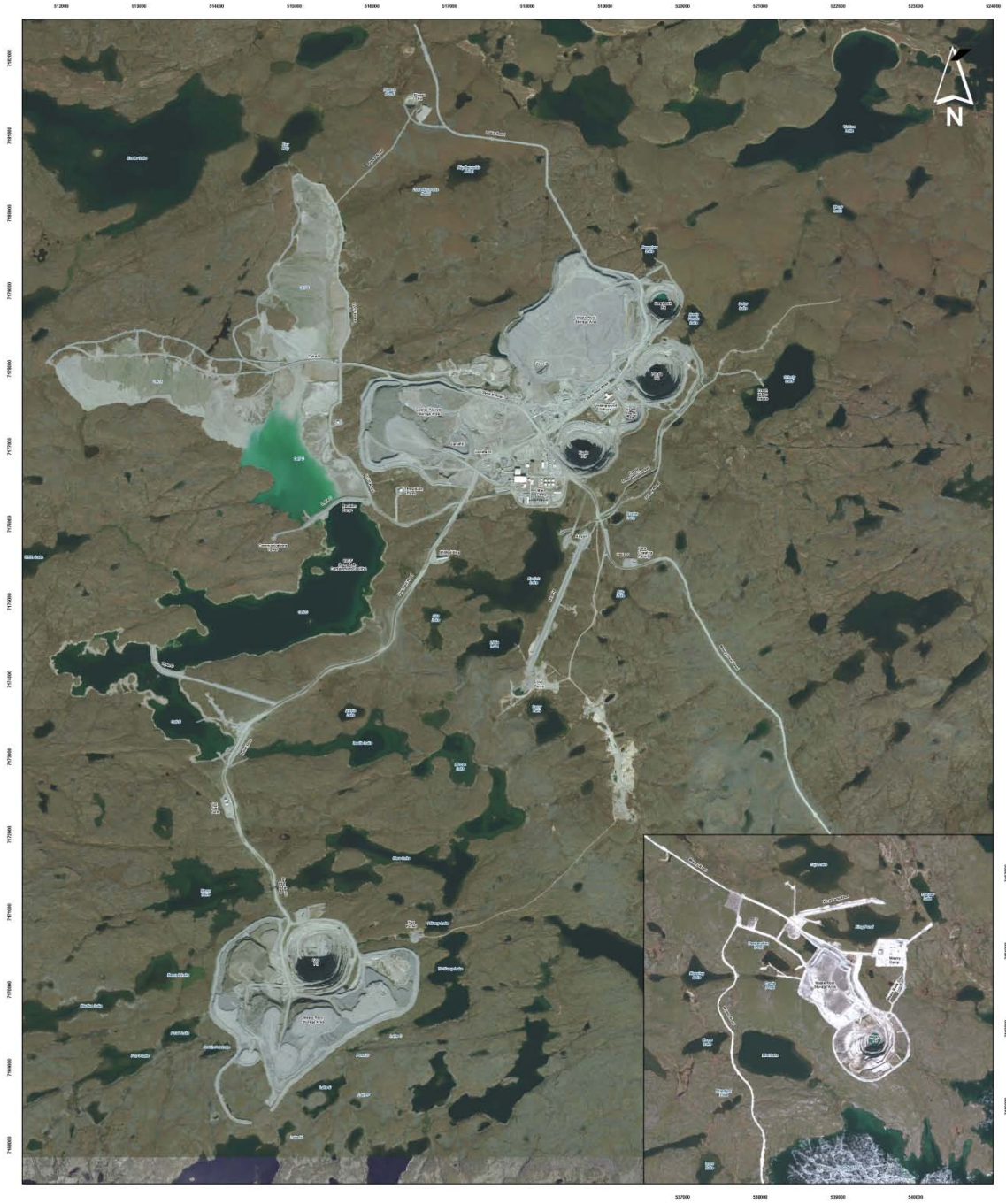
Update for
Lutsel K'e WLEC

Feb. 10, 2012

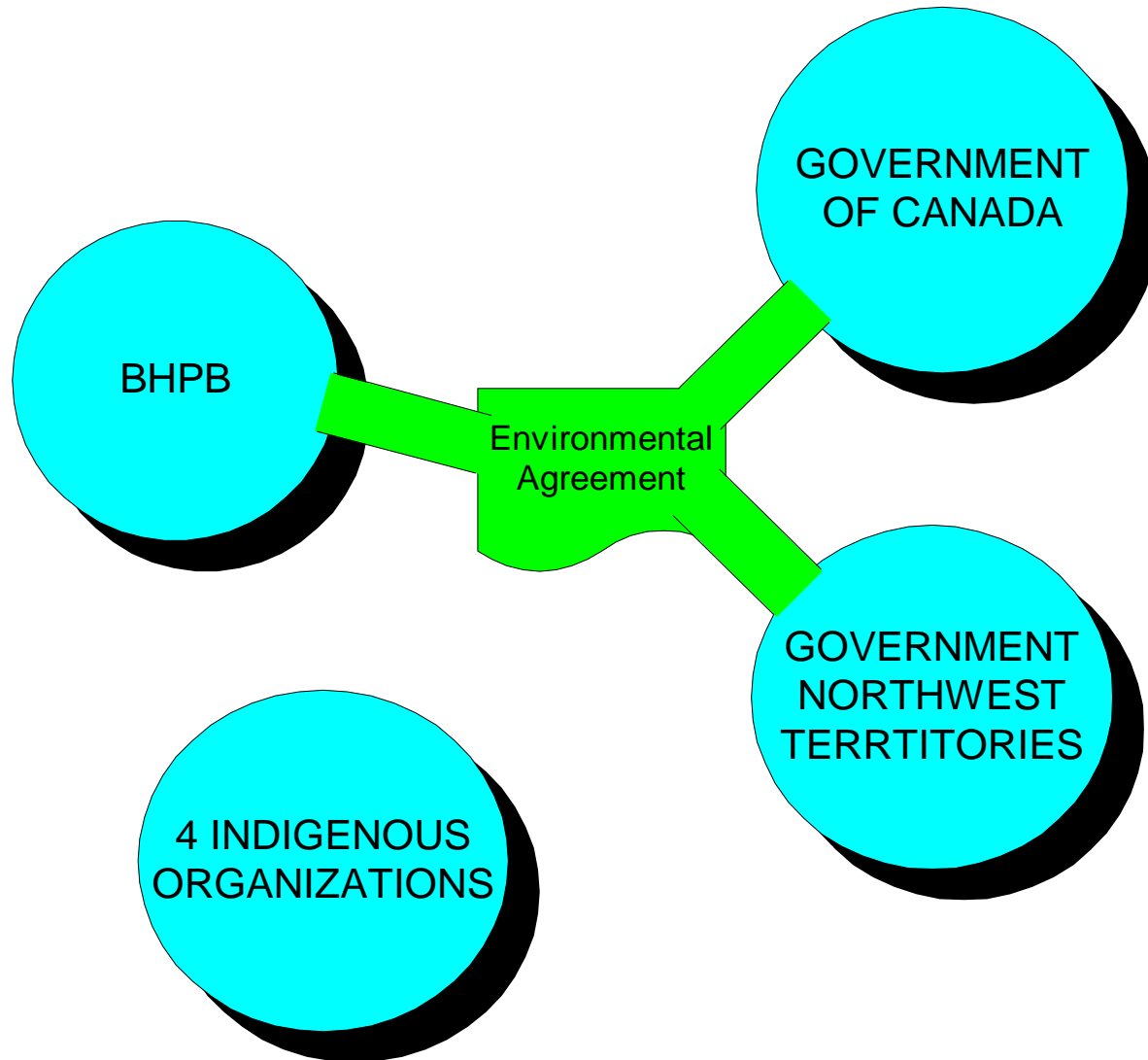
Presentation Outline

- What is IEMA ? What can the Agency do for you?
- How is rock moved around the minesite?
- Important Things in 2011/12
 - Water License Renewal
 - Caribou & Bear Monitoring
 - Fish Monitoring
 - Fay Bay spill clean-up
- Role for TK
- Lutsel K'e questions/concerns?





Environmental Agreement



Independent Environmental Monitoring Agency



IEMA: How can the Agency Help Lutsel K'e ?

- Help you understand what's happening at Ekati and what all the technical talk means
- Bring your concerns about Ekati mine to BHPB & to government
- Convince BHPB to use any of your relevant TK that you want used in monitoring of plants, fish, animals, air and water & in Reclamation planning

IEMA Communication Tools

- Website_**Timeline**: Historical highlights of BHPB Mine
- Use in communities:
 - Schools
 - WLWCs
 - Band councils

Host Environmental Workshops



- 2010: Air Monitoring



- 2011: TK use at mine



Granite

Kimberlite ore



Processing Plant

- Ore crushed
- Diamonds removed

Coarse Kimberlite pile
(large PK pieces)



Waste Rock pile



New proposal for tailings mgmt

- BHP's proposal: dump FPK in



- avoids using Cell D of the Long Lake Containment Facility.



Water License Renewal

- EKATI mine
 - Original renewed every 5 years
 - Expires: August 2013
- BHPB now setting up meetings with communities
- BHPB sends application to WLWB: end March – mid-April

Water License Renewal

(1) - changes proposed to limits on water quality

- Add chloride, nitrate/ moly?, sulphate?
- Chlorides: new CCME guideline

(2) - mixing zone in Horseshoe Lake

(3) – How long should license last?
end of mine production is 2018

Adaptive Management Plan for water

- **Threshold levels**: if reached, BHPB must do something to stop the rising amounts of contaminant before it reaches harmful level
- **IEMA questions** threshold proposed for molybdenum & chlorides

Caribou Monitoring



Caribou Monitoring

- Making sure BHPB & DIAVIK monitor caribou in the same way
- Groups with calves within 5 km of mines don't eat or rest as much
- Roads with high snow banks
heavy truck traffic
affecting caribou crossing



Caribou Monitoring

- 11,571 moved through EKATI (mostly Oct/Nov & July)
- Fence changed at airport
- 1 Female feeding/resting beside runway shot Dec 2011. Crossed over drifted snow



Grizzly Bears



- November 2011 meeting:
 - GNWT, the three diamond mines and other interested parties
 - BHPB proposed regional **grizzly bear** hair snagging program (like the wolverine study)
 - Purpose: get an idea of bear abundance and distribution in the area around the mines.
 - No action on a regional study with the other diamond mines until at least 2013

Water & Fish Monitoring



In lakes downstream of EKATI Mine:

- monitor populations of fish food every yr

- 2012 fish study first since 2007.

TK – DELT

whitefish & trout: contaminants testing (every 6 years)

sculpin (bottom-living fish) : (every 3 years)



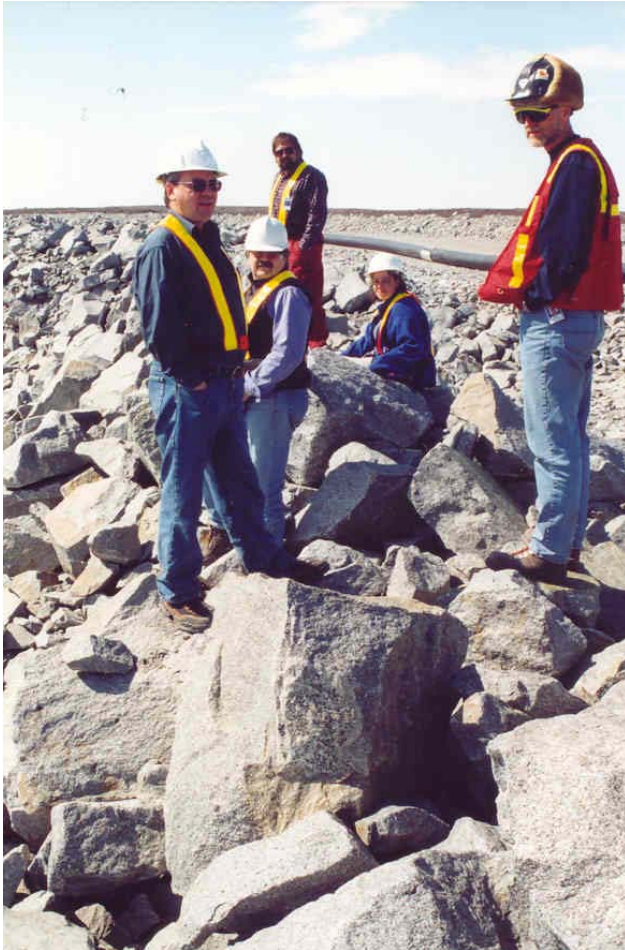
Role for Traditional Knowledge at Mine ?



Holistic Approach Needed !!



Caribou Ramps



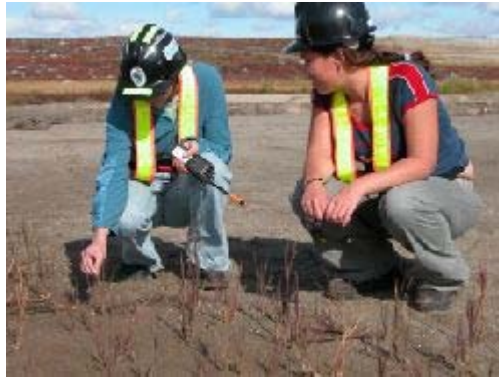
RECLAMATION

- Consultation & design began in 2006
- ICRP finalized
- Research Plan: to answer things not sure of in the reclamation methods
- Lessons for other mines

RECLAMATION

Role for TK ?

- Revegetation





- Where should water be monitored?

Reclamation: Start of Ekati Mine



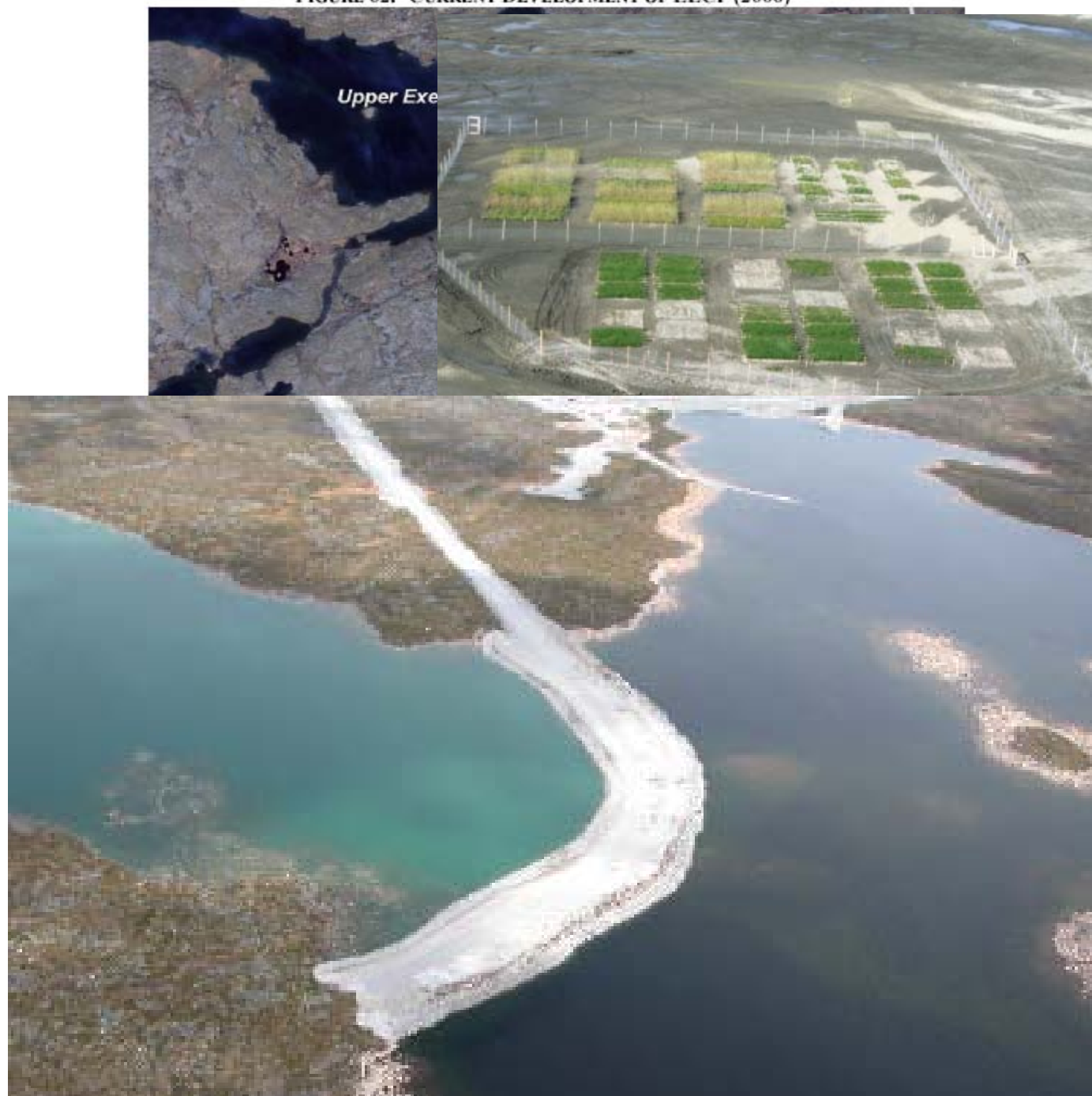
FIGURE 17. PANDA OPEN PIT CURRENT DEVELOPMENT (2006)



FIGURE 25. PANDA AND KOALA PIT LAKES FINAL LANDSCAPE



FIGURE 62. CURRENT DEVELOPMENT OF LLCF (2006)



Waste Rock Pile



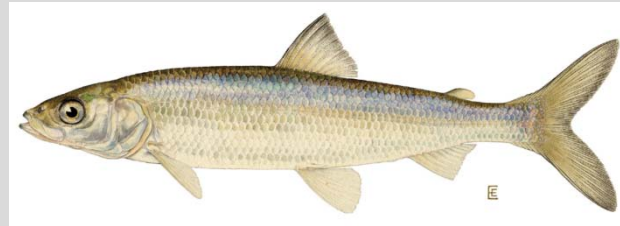
Spill of Tailings onto Fay Lake





Fay Bay Impacts Monitoring

- No spawning beds at spill site except for possibly cisco



http://fish.dnr.cornell.edu/nyfish/Salmonidae/cisco_pic.html

- Plants growing on overland spill path



Selling the mine?

What would it mean for IEMA & the Environmental Agreement?

- Environmental Agreement still remains
- Monitoring Agency still remains